

Application No. 10/550,479
Paper Dated March 26, 2008
In Reply to USPTO Correspondence of November 27, 2007
Attorney Docket No. 1217-052603

REMARKS

Claims 1, 4-7 and 12-21 are currently pending in this application. Claims 2, 3 and 8-11 have been canceled, without prejudice to filing one or more continuation or divisional applications relating to the subject matter thereof. Claim 1 has been amended to incorporate the subject matter of claims 2 and 3. Claims 5-7 and 12-16 have been withdrawn by the Examiner as being non-elected. Applicants have amended withdrawn claims 13 and 15 to update the dependency since claim 11 has been canceled.

New claims 17-21 have been added. New claim 17 is supported in the specification at page 17, lines 1-3. New claim 18 is supported in the specification at page 12, lines 6-18. New claim 19 is supported in the specification at page 12, line 6 to page 13, line 4 and at page 14, lines 10-13. New claim 20 is supported in the specification at page 14, lines 5-8. New claim 21 is supported in the specification at page 14, lines 7-8. No new matter has been added to the application by any of the foregoing amendments.

Claims 2-3 and 10-16 have been rejected under 35 U.S.C. §112, second paragraph for indefiniteness as follows:

(a) in claim 2, line 2, the language of “wherein a cationic surfactant and a water soluble organic solvent are used as a coagulating agent” is allegedly unclear as to whether a mixture of solvent and surfactant is needed, or just only solvent or surfactant; and

(b) in claim 3, line 6, as well as in claims 10-16, line 1, recitation of “obtainable” is allegedly vague and indefinite.

Claims 2 and 3 have been canceled, therefore this rejection is moot and should be withdrawn. While Applicants respectfully disagree with this rejection, when claim 1 was amended to incorporate the substance of claims 2 and 3, the language was changed slightly to clarify that the coagulating agent comprises a cationic surfactant and a water soluble organic solvent and the reference to “obtainable” was eliminated as superfluous. Therefore, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Claims 1 and 4 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,703,461 (“Tanaka et al.”).

The Office Action alleges that Tanaka et al. has disclosed a method of aqueous emulsion polymerization to make a fluorine containing elastomer with reduced metal content,

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citing the title, abstract, and “emulsion polymerization” at column 3, lines 10-15. A pH control agent, such as ammonia, allegedly is applied in the course of polymerization (column 5, line 66 - column 6, line 6; column 9, lines 26-37; column 10, line 54; column 15, line 48). Therefore, the Office Action concludes that Tanaka et al. clearly anticipates claim 1. Regarding claim 4, the Office Action alleges that anionic surfactant, such as salts of carboxylic acid having a fluorocarbon chain or a fluoropolyether chain, is preferably used by Tanaka et al. (column 8, lines 17-30).

Applicants respectfully traverse this rejection and request that the rejection be reconsidered and withdrawn.

In order to support an anticipation rejection, each and every element of the claimed invention or its substantial equivalent, must be found within the four corners of a single reference cited by the Examiner to anticipate. Hybritech Inc. v. Monoclonal Antibodies, Inc., 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986).

Tanaka et al. does not disclose a process for preparing a fluorine containing copolymer by emulsion polymerization method using a coagulating agent comprising a cationic surfactant and a water soluble organic solvent, wherein the cationic surfactant is represented by the following formula:



wherein R is any one of an alkyl group of 1 to 22 carbon atoms, a fluoroalkyl group and a hydrogen atom, four R's may be the same or different, provided that four R's are not hydrogen atoms simultaneously, and X is a halogen atom, as set forth in present claim 1 as amended.

Claim 4 depends from claim 1 and is distinguishable from the teachings of Tanaka et al. for at least the same reasons as discussed above with respect to claim 1.

Accordingly, Applicants respectfully request reconsideration and withdrawal of this §102(e) rejection.

Claims 2-3 and 8-9 have been rejected under 35 U.S.C. §103(a) as being obvious over Tanaka et al. in view of U.S. Patent No. 4,946,902 (“Bekiarian et al.”) and U.S. Patent No. 6,503,988 (“Kitahara et al.”).

The Office Action asserts that Tanaka et al. discloses non-water-soluble organic solvents as coagulating agents (column 11, lines 9-23); and that many other types

coagulating agents are also applied (column 6, lines 2-5; column 10, lines 17-29). The Office Action acknowledges that Tanaka et al. is silent about using a specific coagulating agent such as a mixture of “a cationic surfactant” and “a water-soluble organic solvent”, alleging that Bekiarian et al. and Kitahara et al. teach such subject matter.

Bekiarian et al. allegedly teaches that the aqueous dispersion made in the polymerization step can be isolated by several ways alone or in combination such as: (a) coagulated with agitation with an electrolyte compound, (b) gelled with agitating with an electrolyte compound, and (c) coagulated with addition of a water-immiscible liquid (column 7, lines 32-37; column 6, lines 1-20). With respect to the use of electrolyte compound, Kitahara et al. allegedly teaches that cationic surfactant having a salt type formula similar to the claimed $(R_4N)^+X^-$ can be used to coagulate the latex after the polymerization (column 3, lines 5-7 and 44-50; column 4, lines 12-54). With respect to the use of water-soluble organic solvent to be with such a cationic surfactant, Kitahara et al. allegedly discloses that water-soluble organic solvent, such as methanol or acetone, may be added alone or together (column 4, lines 61-63). By doing so, the Office Action concludes that the polymer product can be effectively and conveniently coagulated, isolated and then dried.

The Office Action contends that one having ordinary skill in the art would have found it obvious to modify Tanaka’s process of coagulating by applying or further including a mixture of salt-type cationic surfactant and water-soluble organic solvent as taught by Bekiarian et al. and Kitahara et al., since all of the cited references deal with coagulating the fluoropolymer from polymerization, to effectively and conveniently coagulate, isolate and dry the product in a more effective manner.

Regarding claims 8 and 9, anionic surfactants such as salts of carboxylic acid having a fluorocarbon chain or a fluoropolyether chain are allegedly used by Tanaka et al. (column 8, lines 17-30).

Applicants respectfully traverse the §103(a) rejection and request that the rejection be reconsidered and withdrawn.

As reiterated by the Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. ___, 82 U.S.P.Q.2d 1385 (2007), the framework for the objective analysis for determining obviousness under 35 U.S.C. §103 is stated in *Graham v. John Deere*. Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court

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Decision in KSR International Co. v. Teleflex Inc., 72 Fed. Reg., No. 195 (October 10, 2007) at page 57527 (hereinafter “Examination Guidelines”). The factual inquiries enunciated by the Court are as follows:

- (1) Determining the scope and content of the prior art;
- (2) Ascertaining the differences between the claimed invention and the prior art; and
- (3) Resolving the level of ordinary skill in the pertinent art.

Examination Guidelines at page 57527.

Claims 2-3 and 8-9 have been canceled, therefore the rejection is moot and should be withdrawn.

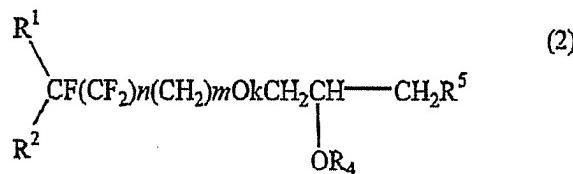
The subject matter of claims 2 and 3 has been incorporated into claim 1 by amendment. As discussed above, Tanaka et al. does not suggest or disclose a process for preparing a fluorine containing copolymer by emulsion polymerization method using a coagulating agent comprising a cationic surfactant and a water soluble organic solvent, wherein the cationic surfactant is represented by the following formula:

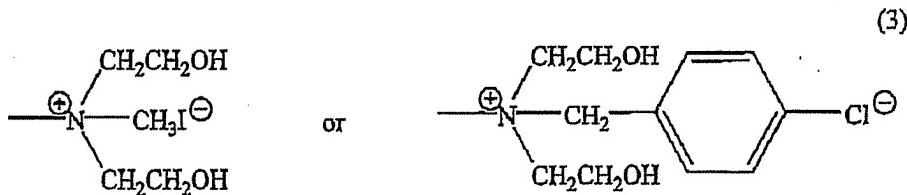


wherein R is any one of an alkyl group of 1 to 22 carbon atoms, a fluoroalkyl group and a hydrogen atom, four R's may be the same or different, provided that four R's are not hydrogen atoms simultaneously, and X is a halogen atom, as set forth in present claim 1 as amended.

Further, Tanaka et al. does not disclose the combination of a cationic surfactant and a water soluble organic solvent, nor the cationic surfactant represented by the above formula “ $(R_4N^+)X^-$ ”.

The cationic surfactant Kitahara et al. taught is a compound of the formula (2) wherein R^5 is group of the formula (3) (column 4, lines 12-20).





This compound obviously differs from the specific cationic surfactant of present claim 1, especially in terms of "R" in the above formula " $(R_4N^+)X^-$ ", wherein R is an alkyl group, a fluoroalkyl group or a hydrogen atom.

Likewise, Bekiarian et al. is silent on the above specific cationic surfactant.

Accordingly, the coagulating agent containing a cationic surfactant represented by the above formula $(R_4N^+)X^-$ wherein R is an alkyl group, a fluoroalkyl group or a hydrogen atom and a water soluble organic solvent is not taught by Tanaka et al., Bekiarian et al. or Kitahara et al.

Therefore, the present invention is not obvious from the disclosures by Tanaka et al., Bekiarian et al. and Kitahara et al., combined as proposed by the Office Action.

Claims 4-7 and 12-21 depend directly or indirectly from claim 1 and are distinguishable from the teachings of Tanaka et al., Bekiarian et al. and Kitahara et al. for at least the same reasons as discussed above with respect to claim 1.

Accordingly, Applicants respectfully request reconsideration and withdrawal of this §103(a) rejection.

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Examination and allowance of pending claims 1, 4-7 and 12-21 is respectfully requested.

Respectfully submitted,

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